

SHIP PRODUCTION COMMITTEE
FACILITIES AND ENVIRONMENTAL EFFECTS
SURFACE PREPARATION AND COATINGS
DESIGN/PRODUCTION INTEGRATION
HUMAN RESOURCE INNOVATION
MARINE INDUSTRY STANDARDS
WELDING
INDUSTRIAL ENGINEERING
EDUCATION AND TRAINING

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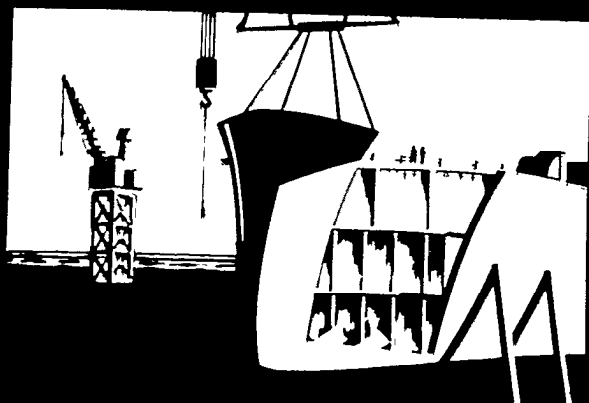
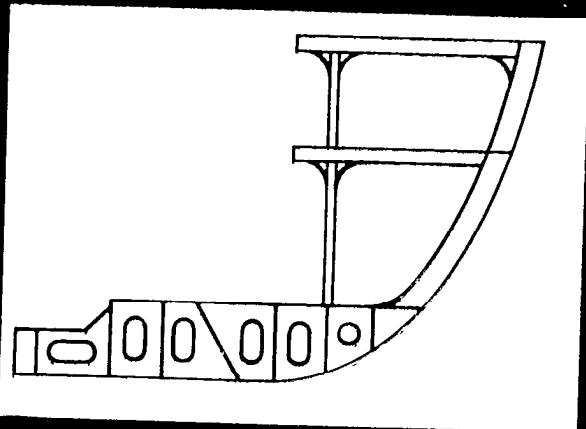
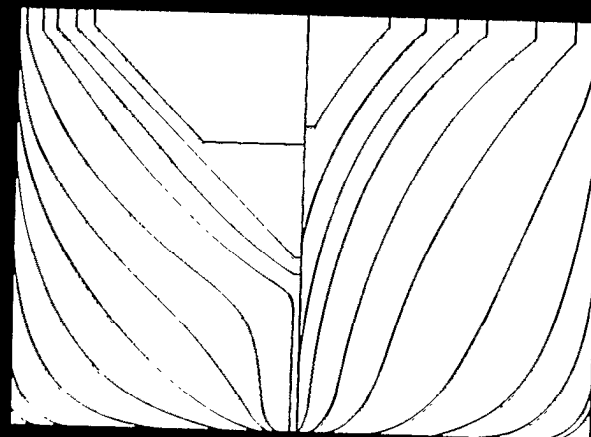
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P RODUCTIVITY
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NAVY MANUFACTURING TECHNOLOGY PROGRAM

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Prior to his present position, Mr. Carstater was Director of Advanced Products and Processes at the Naval Ordnance Station, Indian Head, Maryland. He earlier held several project engineering and program manager positions, principally in missile propulsion, explosives, and specialty chemical processing.

Mr. Carstater received the Meritorious Civilian Service Award in 1975 for his role in the scale-up and pilot processing of critical rocket fuels.

GOOD MORNING, I'M PLEASED TO HAVE BEEN ASKED TO SPEAK TO YOU TODAY ON THE NAVY'S MANUFACTURING TECHNOLOGY PROGRAM, I SAY THIS:

I NOT ONLY BECAUSE YOUR'E A GROUP OF CONCERNED CITIZENS INTERESTED IN THE FUTURE OF SHIPBUILDING IN THE U, S, AND MT SHARES IN THIS INTEREST, AND

II NOT ONLY BECAUSE SHIPBUILDING IS A TOPIC OF NATIONAL PROMINANCE IN REGARD TO PRODUCTIVITY AND ITS IMPACT ON THE ECONOMY - AND THAT ALSO IS OF INTEREST IN THE MT PROGRAM

. BUT, PRIMARILY, I'M PLEASED BECAUSE YOU HAVE DISPLAYED THIS INTEREST IN OUR PROGRAM AND WHAT IT IS ABOUT, AND THIS INDICATES A WILLINGNESS TO WORK TOWARD FULLFILLING OBJECTIVES IN THESE AREAS.

HAVING SAID THIS, I WON'T TRY TO CONVERT you ALL INTO MT SUPPORTERS, BUT I WILL SIMPLY GIVE YOU AN OVERVIEW OF THE NAVY PROGRAM IN GENERAL - AND IT WILL NOT BE A "SHIPYARD ONLY" VIEW, I WILL BE TALKING TO THESE TOPICS:

THE MT PROGRAM, INCLUDING OBJECTIVES, ORGANIZATION AND PROCEDURES

I PROGRAM HIGHLIGHTS

I COMPLETED STUDIES

I TECHNOLOGY TRANSFER AND

I PROGRAM OUTLOOK

MT PROGRAM

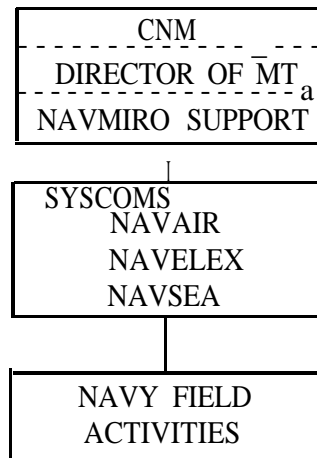
BRIEFING CONTENT

- MT PROGRAM
- TECHNOLOGY TRANSFER
- FUNDING PROFILE
- FY80 OUTLOOK
- FY79 HIGHLIGHTS
- THRUSTS/INTERESTS
- COMPLETED STUDIES
- SUMMARY

OBJECTIVES

- LOWER ACQUISITION COSTS
- SUPPORT NAVY NEEDS
- INCREASE PRODUCTIVITY
- NEW TECHNOLOGY IMPLEMENTATION

ORGANIZATION



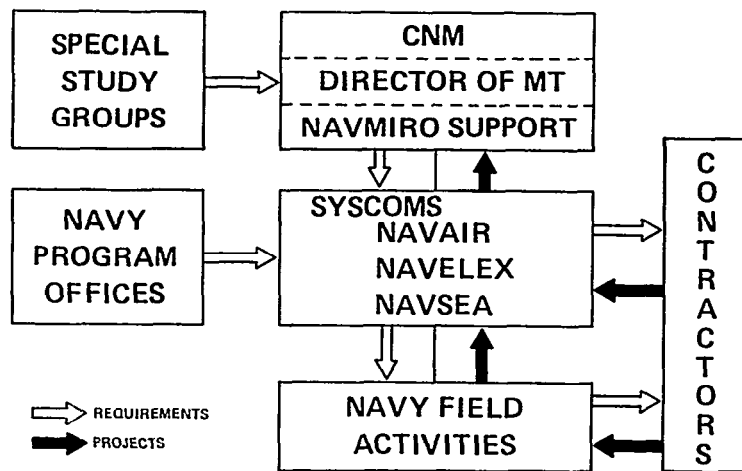
FOR THOSE OF YOU WHO ARE NOT FAMILIAR WITH OUR PROGRAM, MANUFACTURING TECHNOLOGY IS A MULTIDISCIPLINED EFFORT WHICH PROVIDES "SEED MONEY" TO ACCELERATE THE TRANSITION OF EMERGING TECHNOLOGY TO INDUSTRIAL CAPABILITY. THESE OBJECTIVES CENTER ON THE REDUCTION OF MATERIAL ACQUISITION COSTS TO SUPPORT CURRENT AND ANTICIPATED NEEDS OF THE FLEET, OUR AIM IS TO INCREASE PRODUCTIVITY, AND DECREASE LEAD TIMES, BY APPLYING NEW TECHNOLOGY IN THE MANUFACTURING ARENA,

TO ACCOMPLISH THIS, THE NAVY APPLIES A LEAN, BUT HIGHLY FUNCTIONAL, ORGANIZATION, MANAGEMENT OF THE PROGRAM IS CENTERED IN THE OFFICE OF THE DIRECTOR, UNDER THE CHIEF OF NAVAL MATERIAL, EACH HARDWARE SYSTEM COMMAND (NAVAIR, ELEX AND SEA) SET UP AN OFFICE TO EXECUTE THE PROGRAM, MOST OF THE INDIVIDUAL PROJECTS ARE MANAGED THROUGH ENGINEERS OR TECHNICAL EXPERTS AT FIELD ACTIVITIES, NAVMIRO, A NAVMAT EXTENSION AT THE NAVY YARD IN PHILADELPHIA, PROVIDES TECHNICAL SUPPORT TO THE PROGRAM DIRECTOR,

IN A SIGNIFICANT, RECENT DEVELOPMENT, THE OFFICE OF THE ASSISTANT SECRETARY OF THE NAVY (MRA&L) HAS ESTABLISHED A "PRINCIPAL FOR PRODUCTIVITY" (DR. JAMES TWEEDDALE), THE MT PROGRAM OFFICE WORKS IN CLOSE COORDINATION WITH THIS OFFICE, THIS WILL ENABLE MT PLANNING TO DIRECTLY INTERACT WITH THE SETTING OF POLICY ON A BROAD SPECTRUM OF NAVY ACQUISITION ISSUES, THIS ALLIANCE WILL ALSO SERVE TO HEIGHTEN VISIBILITY OF MT EFFORTS WITHIN THE NAVY AND TO EVOKE AN EMPHASIS ON PROGRAMS WHERE PIVOTAL PRODUCTIVITY ISSUES EXIST,

MT PROGRAM

REQUIREMENTS AND PROJECT PROGRESSION



PROJECT REQUIREMENTS

- DEPARTMENT OF THE NAVY REQUIREMENT
- M.T. PROBLEM SOLUTION
- ADEQUATE STATE-OF-THE-ART
- NO DUPLICATION OF EFFORT
- BEYOND NORMAL RISK OF INDUSTRY
- PROCESS ORIENTED

THIS SHOWS HOW THE ORGANIZATIONAL ELEMENTS INTERACT,
TOGETHER WITH CONTRACTORS, TO GENERATE PROJECTS IN RESPONSE
TO NAVY NEEDS.

IN ADDITION TO PROGRAM OFFICES AND SPECIAL STUDY GROUPS,
CONTRACTORS PARTICIPATE IN A SIGNIFICANT WAY.

CONFIRMED REQUIREMENTS ARE PASSED FROM NAVMAT TO THE
SYSCOMS FOR FULL VERIFICATION AND SUBSTANTATION. PERFORMING
ACTIVITIES DEFINE PROJECTS WHICH ANSWER THOSE REQUIREMENTS.

EACH PROJECT MUST MEET CERTAIN CRITERIA IN ORDER TO BE
CONSIDERED FOR FUNDING UNDER THE MT PROGRAM.

IT MUST SATISFY A CURRENT OR ANTICIPATED NAVY REQUIREMENT

IT MUST OFFER A SOLUTION TO A MANUFACTURING PROBLEM

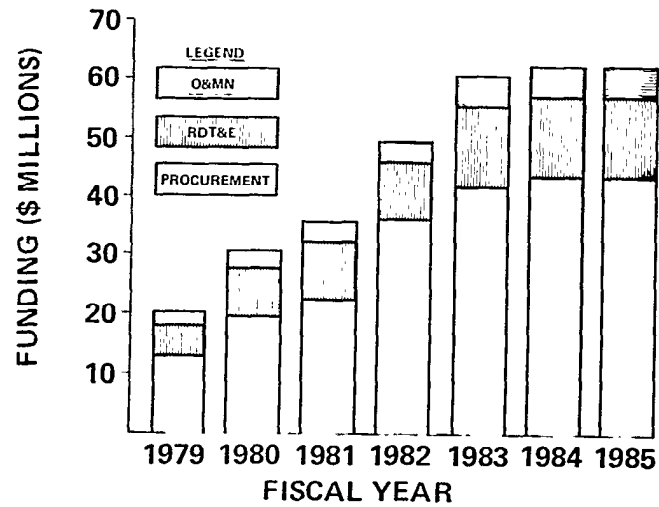
IT SHOULD DEMONSTRATE ADEQUATE STATE-OF-THE-ART
(THIS MEANS THAT THE TECHNOLOGY MUST HAVE ALREADY
BEEN SHOWN FEASIBLE TO THE EXTENT THAT PROBABILITY
OF SUCCESS IS HIGH)

IT MUST BE BEYOND THE NORMAL RISK OF INDUSTRY
IF ANY QUALIFIED SEGMENT OF INDUSTRY WILL COMMIT
PRIVATE CAPITAL - WE SHY FROM ACTIVE SUPPORT)

THE PROJECT MUST BE PROCESS ORIENTED
WE DO NOT PROVIDE A DESIGN CHANGE FUNCTION, BUT WE DO
LOOK FOR GENERIC APPLICATIONS IN PROCESS DEVELOPMENT
(WE CONSIDER HARDWARE ITEMS PRODUCED TO BE SIMPLY
VEHICLES FOR PROCESS DEMONSTRATION)

MT PROGRAM

FUNDING PROFILE



FY79 HIGHLIGHTS

- PROJECTS PROCESSED 109
 - NEW STARTS 37
 - COMPLETED 14
 - ON-GOING 58
- PROJECTS IMPLEMENTED
- COMPLETED FOUR STUDIES
- INITIATED INVESTMENT STRATEGY PLAN

THE FUNDING IN SUPPORT OF OUR PROGRAM, LOOKS LIKE THIS:
THE FY80 PROGRAM IS BUDGETED FOR \$30.6 MILLION WHICH IS
SOMEWHAT BELOW OUR PREDICTION OF LAST YEAR, HOWEVER, IN
COMPARISON WITH FY79, IT REPRESENTS A 50% INCREASE,
THIS, TOGETHER WITH PROJECTED FUNDING LEVELS, INDICATES THE
NAVY'S EXPANDING INTEREST IN THE PROGRAM, THE PROJECTED
FUNDING LEVEL FOR FY81 IS OVER \$30 MILLION, ALSO, ADM,
WHITTLE, THE CNM, RECENTLY INITIATED A MAJOR NAVY EFFORT IN
SUPPORT OF ALL PRODUCTIVITY INTERESTS, THIS WILL BE
ACCOMPANIED BY A SUBSTANTIAL FINANCIAL COMMITMENT, BEGINNING
IN FY82, AND IT WILL INCLUDE ELEMENTS OF THE MT PROGRAM.

TURNING TO HIGHLIGHTS OF FY79, THIS SHOWS SOME KEY POINTS,
I'D LIKE TO PUT THINGS IN PROPER PERSPECTIVE, HOWEVER, FY79
IS ONLY THE THIRD YEAR OF EXISTENCE FOR A FUNDED NAVY PROGRAM,
ACCORDINGLY, MOST OF THE FY77 PROJECTS ARE JUST NOW COMING TO
FRUITION, THIS IS REFLECTED IN THE PERCENTAGE OF IMPLEMENTED
TO COMPLETED PROJECTS, WE EXPECT THIS TO PICK-UP SIGNIFICANTLY,
WE COMPLETED FOUR INVESTMENT OPPORTUNITY STUDIES THIS YEAR,
(I'LL SAY MORE ABOUT THESE LATER) AND WE INITIATED AN ANALYSIS
OF THESE STUDIES IN ORDER TO FORM AN INVESTMENT STRATEGY PLAN,
THIS PLAN WILL EMPHASIZE THE COMMANDS RECOGNITION OF COST
INTENSIVE MANUFACTURING STEPS AND KNOWN PROCUREMENT NEEDS
WHILE MAXIMIZING THE SAVINGS BENEFITS, WE FEEL THAT THIS IS
NECESSARY, IN ORDER TO MAXIMIZE THE IMPACT FROM OUR LIMITED
RESOURCES,

NAVY MANUFACTURING
TECHNOLOGY PROGRAM

MANUFACTURING TECHNOLOGY
INVESTMENT OPPORTUNITY STUDIES

- ELECTRONICS
- WEAPONS
- SHIPBUILDING
- SHIPS OVERHAUL
- AIRCRAFT MANUFACTURE
- AIRCRAFT OVERHAUL

IN 1976, THE NAVY MADE AN AGREEMENT WITH THE SECRETARY OF DEFENSE TO CONDUCT COST DRIVER STUDIES IN THESE AREAS. TWO OF THESE STUDIES, ELECTRONICS AND SHIPS CONSTRUCTION WERE COMPLETED LAST YEAR. I'LL COMMENT ON THE SHIPBUILDING STUDY AND THE RECENTLY COMPLETED SHIPS OVERHAUL STUDY.

GENERALLY, THE SHIPBUILDING STUDY RE-EMPHASIZED THE NATURE OF THE INDUSTRY AS BEING BASICALLY A LABOR INTENSIVE AND FIXED POINT CONSTRUCTION PROCESS, THIS SUMMARY PROVIDES A MORE DETAILED VIEW OF THE FUNCTIONAL MANPOWER COSTS, AND THE DATA POINT TO THE NEED FOR THESE CHANGES

MORE AUTOMATION TO REDUCE LABOR CONTENT AND
DEPENDANCY ON HIGH SKILLS

STREAMLING OF PLANNING, SCHEDULING AND
CONTROL OPERATIONS

EMPHASIS ON PORTABLE TOOLS WHICH TAKE TECHNOLOGY
AND AUTOMATION ABOARD THE SHIP

ALL TOLD, THIS STUDY HAS PROVIDED A GOOD FOUNDATION FOR
PLANNING OUR MT EFFORTS IN SHIPBUILDING.

S U M M A R Y O F C O S T F A C T O R S I N S H I P C O N S T R U C T I O N

NOMINAL FUNCTIONAL WORK GROUP	PERCENT DISTRIBUTION OF MANHOURS BY SHIP CLASS							
	DD 963	SSN 688	FFG 7	CVN 68	CGN 38	LHA 1	AD 41	AS 39
ELECTRICAL	22	9	13	8	10	16	7	7
PIPEFITTING	13	15	9	9	11	15	12	12
WELDING	10	17	7	15.5	14	12	23	23
SHIPFITTING	13	10	10	11	8	13	12	12
QUALITY ASSURANCE	7	10	4	6	8	-6	1	1
OUTSIDE MACHINIST	5	8	4	6	7	4	5	5
SHEETMETAL	6	4	3	3	3	6	9	9
PAINTING & BLASTING	7	2	5	4	2	9	4	4
JOINER	6	1		2	2	8	1	1
RIGGING & CRANE OPERATIONS	3	2	1	6	5	3	4	4
SHIPWRIGHT	2	1	3	1	1	2	1	1
MACHINE SHOP	1	2	2	1.5	1	<1	2	2
DRAFTING		8	10	15	16			
PLANNING & ESTIMATING			10				4	4
TECHNICAL		1	5	5	5			
MOLD LOFT	<1	1	4	1	1	<1	1	1
PROJECTS SUPPORT	1		3			<1	4	4
TRANSPORTATION-MATERIAL HANDLING		1	2	<1	<1		1	1
HELPERS & CLEANING	2	3		1	1	3	3	3
CHIPPING & GRINDING	2	2	2	2	2	2	2	2
SECURITY		3	1	1	1		1	1
MISCELLANEOUS	1	3	2	2	2	1	3	3

NAVY MANUFACTURING TECHNOLOGY PROGRAM

SHIPBUILDING TECHNOLOGY IMPROVEMENTS

SHIPBUILDING HIGH COST AREAS

- HULL CONSTRUCTION
 - ELECTRICAL AND ELECTRONICS
 - PIPEFITTING
 - OUTSIDE MACHINIST
 - SHEETMETAL
- AUTOMATION OF PROCESSING
 - REDUCE LABOR CONTENT AND SKILLS LEVELS
 - STREAMLINE MANUFACTURING PLANNING
 - ORDERING
 - HANDLING
 - SCHEDULING
 - INVENTORY CONTROL
 - PORTABLE TOOLING
 - SHIPBOARD UTILITY
 - UNIQUE CAPABILITIES

MT PROGRAM POTENTIAL PAYOFFS IN SHIPS OVERHAUL FUNCTIONS

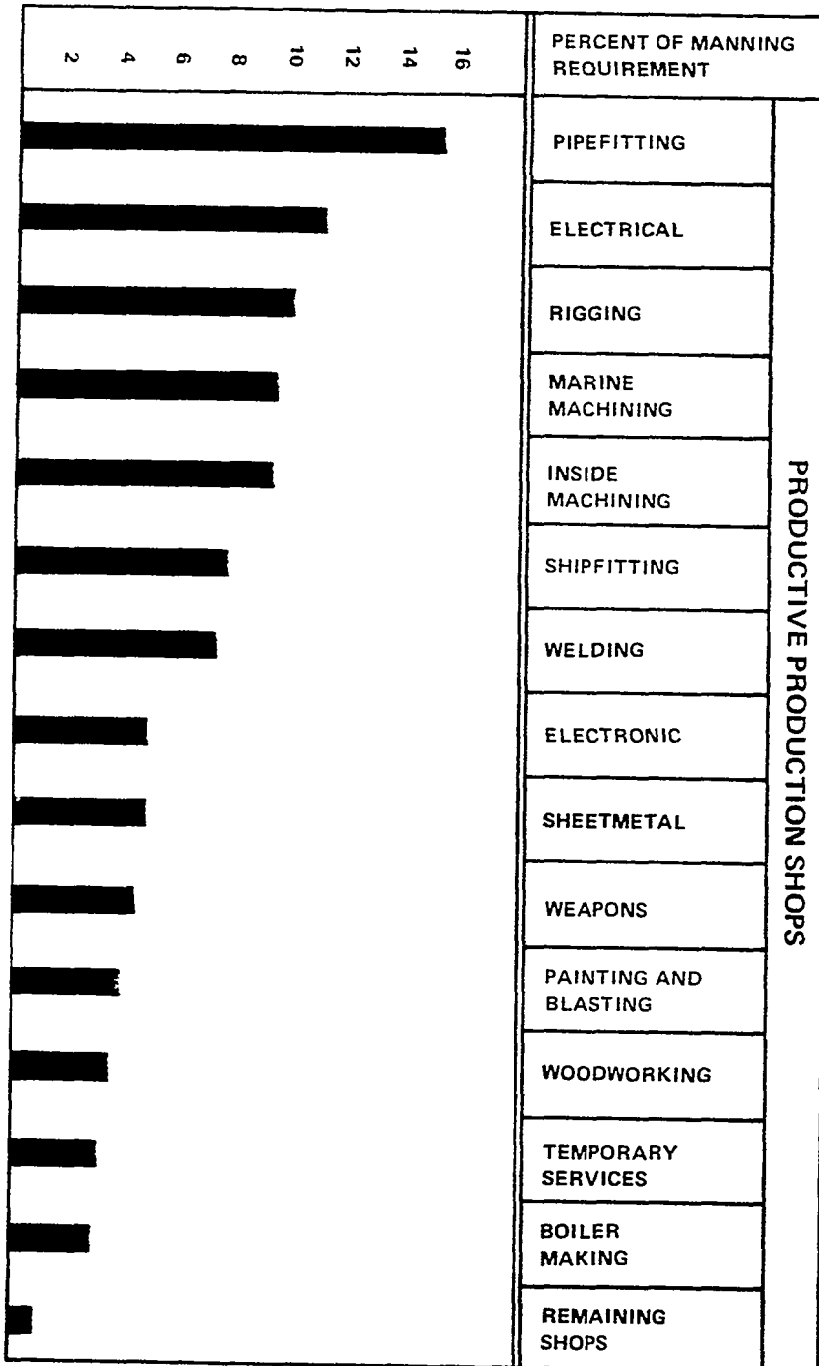
MAJOR REPAIR OPERATIONS	REDUCTION IN DIRECT LABOR COSTS (\$M)	REDUCED TIME IN OVERHAUL	
		DAYS	(\$M)
PIPING & VALVES	9.0	853	280
BOILER	1.8	1,530	215
ELECTRICAL	10.8	-	-
STRUCTURAL	3.0	-	-
WELDING	14.0	-	-
CLEANING & PAINTING	6.0	66	11

THE SHIPS OVERHAUL STUDY IDENTIFIED THE MORE PROMINENT LABOR REQUIREMENTS AND COSTS IN OVERHAUL AS PERFORMED IN NAVY YARDS, PIPING, BOILER AND ELECTRICAL REPAIRS WERE AMONG THE LEADING COST CONTRIBUTORS, ALTHOUGH WELDING, STRUCTURAL REPAIRS AND CLEANING AND PAINTING WERE ALSO EXAMINED. PLANNING, BUDGETING AND CONTROL OF WORK FLOW WITHIN THE YARDS WERE, AGAIN, SINGLED OUT AS AREAS WHERE SIGNIFICANT IMPROVEMENTS COULD BE MADE, AND TIME SAVINGS WERE CALCULATED IN TERMS OF FLEET READINESS FACTORS BASED ON "ACHIEVABLE" REDUCED TIME IN THE YARDS. A SUMMARY SHEET ON SUCH AN ANALYSIS IS SHOWN.

FACTORS EFFECTING OVERHAUL COSTS AND DURATIONS

- ' BUDGETS ASSUME INCREASING COSTS
- ' EXHAUSTING BUDGET TENDANCY
- ' WORKLOAD/STAFFING LEVELS
- ' "TRADITIONAL" WORK RULEs
- ' PLANNING PROCESS ENCOURAGES HIGH LEVEL
OF PREVENTIVE MAINTENANCE
- ' NON-STANDARDIZATION IN DESIGN AND PROCUREMENT
- ' PROCUREMENT LEAD TIME DELAYs
- ' CREW MAINTENANCE PRACTICES

SHIP OVERHAUL COST DRIVERS



AGAIN, THE EFFECTIVENESS OF BETTER PORTABLE TOOLING WAS IDENTIFIED IN THE YARD OVERHAUL ENVIRONMENT.

SOME OTHER FACTORS, THAT WERE FOUND TO SIGNIFICANTLY INFLUENCE OVERHAUL TIME AND DOLLAR COST, ARE SUMMARIZED HERE.

TECHNOLOGY TRANSFER WAS JUST DISCUSSED (IN AN EARLIER PAPER) FROM THE SHIPBUILDING STANDPOINT, THE NAVY MT PROGRAM PARTICIPATES IN A SORT-OF TRI - SERVICE/INDUSTRY CONSORTIUM, THROUGH MTAG, THE MANUFACTURING TECHNOLOGY ADVISORY GROUP, THIS GROUP HAS SIX TECHNICAL SUBCOMMITTEES WHICH ACTIVELY WORK WITH INDUSTRIAL SOCIETY COUNTERPARTS TO FOCUS ON TECHNICAL EXCHANGE, THIS IS DONE ON A CONTINUING BASIS THROUGH BOTH FORMAL AND INFORMAL MEANS, THE SUBCOMMITTEES ALSO REVIEW EACH OF THE SERVICES PROGRAMS TO:

- IDENTIFY AREAS OF COMMON INTEREST
- COORDINATE SERVICE EFFORTS &
- ELIMINATE DUPLICATION

THE SUBCOMMITTEES CONDUCT MT WORKSHOPS IN HIGH INTEREST AREAS, THESE ARE A FEW HELD WITHIN RECENT MONTHS, THEY HAVE BEEN CHARACTERIZED BY ACTIVE INDUSTRY PARTICIPATION FOLLOWED BY DOD PLANNING SESSIONS,

TECHNOLOGY TRANSFER THROUGH MTAG

TECHNICAL SUBCOMMITTEES

' COMPUTER AIDED DESIGN/MANUFACTURE

' ELECTRONICS & OPTICS

. METALS

. NON-METALS

. INSPECTION & TESTING

. AMMUNITION

MTAG WORKSHOPS

TECHNOLOGY INTEREST AREAS

' LASER MANUFACTURING

' CASTING TECHNOLOGY

' JOINING TECHNOLOGY

' TRAVELING WAVE TUBE MANUFACTURING

' HYBRID CIRCUIT PROCESSING

' COMPONENTS & PACKAGING TECHNOLOGY

' COMPOSITES MANUFACTURING

TECHNOLOGY TRANSFER

. END-OF-CONTRACT DEMONSTRATIONS

. MTAG SUBCOMMITTEE INTERACTION

. MTAG SUBCOMMITTEE WORKSHOPS

END-OF-CONTRACT BRIEFINGS AND
PROCESS DEMONSTRATIONS ARE ALSO USED TO DIFFUSE TECHNOLOGY,
WITHIN THE DEFENSE PRODUCTION SECTOR OF THE INDUSTRY,
CONTRACTORS ARE REQUIRED TO BRIEF THEIR INDUSTRY ON THEIR
ACCOMPLISHMENTS, GENERALLY DISCUSSED ARE THE PROS AND CONS
OF THE PROCESSING AND THE VOIDS REMAINING IN THE TECHNOLOGY,
THE NAVY WOULD LIKE TO BECOME MORE ACTIVE IN COMMUNICATING
WITH THE SHIPBUILDING INDUSTRY IN ALL THESE MODES OF TECHNOLOGY
TRANSFER,

TYPICAL MANUFACTURING TECHNOLOGY PROJECTS

ION IMPLANTATION PROCESS

- . ISOTHERMAL SHAPE ROLLING
- . LOW COST TORPEDO PROPELLERS
- . ULTRAFINE CARBON-CARBON WEAVING
- . FOAM FILLED FIBERGLASS RADOMES
- *N/C* ULTRASONIC DRILLING OF CERAMICS

JUST TO ILLUSTRATE THE DIVERSITY AND SCOPE OF THE NAVY MT PROGRAM INVOLVMENT, SOME TYPICAL PROJECTS ARE LISTED HERE:

ESTABLISHMENT OF ION IMPLANTATION, AS A PROCESS FOR MANUFACTURING DELICATE ELECTRONIC CIRCUITS FOR MEMORY AND DEVICE APPLICATIONS.

ESTABLISHMENT OF ISOTHERMAL SHAPE ROLLING FOR NET SHAPE PROCESSING OF TITANIUM AND SUPERALLOY FOR ENGINE & AIRFRAME STRUCTURES TO MINIMIZE CRITICAL MATERIALS USAGE AND ROUGH MACHINING COSTS.

- W COST TORPEDO PROPELLERS WILL REPLACE MACHINED ALUMINUM PROPELLERS WITH INJECTION MOLDED, FIBERGLASS REINFORCED POLYESTER PROPELLERS, AN APPROXIMATE \$1 MILLION COST AVOIDANCE IS ENVISAGED BY 1987.

- ULTRA FINE CARBON-CARBON WEAVING WILL BE USED TO FABRICATE MULTIDIRECTIONAL, CARBON-CARBON REINFORCED, REENTRY VEHICLE, NOSE TIP PREFORMS AND REDUCE COSTS BY \$14,000 A UNIT.

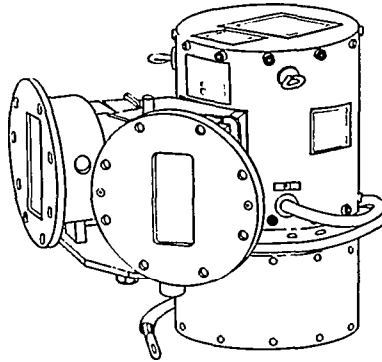
- FOAM FILLED FIBERGLASS RADOMES PRODUCTION COSTS WERE REDUCED FROM \$6000 TO \$450 PER UNIT USING NEW PROCESSING TECHNIQUES. A TOTAL COST AVOIDANCE OF \$4 MILLION IS EXPECTED.

I NUMERICALLY CONTROLLED ULTRASONIC DRILLING AND POLISHING OF CERAMICS FOR LASER GYROS WILL REDUCE PRODUCTION COSTS BY \$2750 A UNIT.

NEXT I'LL DISCUSS SOME OTHER NAVY PROJECTS WHICH HAVE HELD, OR ARE ABOUT TO HOLD, END-OF-PROJECT DEMONSTRATIONS.

MT PROGRAM

SFD-261 CROSSED-FIELD AMPLIFIER (CFA)



INVESTMENT: \$265,000

SAVINGS: \$900,000 PER SHIP

FY 80 OUTLOOK

- PROJECTS EXPECTED TO BE PROCESSED 112
 - EXPECTED NEW STARTS 53
 - EXPECTED COMPLETIONS 38
 - EXPECTED TO BE ON-GOING 21
- IMPLEMENT INVESTMENT STRATEGY PLAN
- INITIATE TRACKING SYSTEM

A PROJECT, WHICH MAY BE FAMILIAR TO MANY OF YOU, IS THE THE COMPUTERIZED BENDING OF FRAMES FOR SHIP STRUCTURES. THIS PROJECT, CURRENTLY UNDERWAY IN CONJUNCTION WITH NASSCO WILL DEMONSTRATE INDUSTRIAL CAPABILITY TO BEND UP TO 23 INCH "I" BEAMS WITH 10 INCH FLANGES USING A FOUR POINT BEAM BENDER WITH COMPUTER CONTROL. THIS WILL REPLACE MANUAL TEMPLATING AND THREE POINT BENDING METHODS, AND IT WILL PROVIDE BENDS THAT PRECLUDE TWISTS AND DISTORTIONS AND ARE PRECOMPENSATED FOR SPRINGBACK AND OTHER MATERIAL CHARACTERISTICS. (YOU MAY HEAR MORE ABOUT THIS IN ONE OF THE SPECIALITY SESSIONS THIS AFTERNOON).

IN ANOTHER PROJECT, ACOUSTIC WELD MONITORING USES TRANSDUCERS TO MONITOR WELDS FOR CRACKS AND IMPERFECTIONS. A COMPUTERIZED RECORDING DEVICE LOCATES CRACKED WELDS TO ENABLE EARLY REPAIR WITHOUT WAITING DAYS OF "CURING PERIOD" FOR X-RAY INSPECTION.

IN A THIRD PROJECT, CHANGES IN THE PROCESSING OF THE CROSSED FIELD AMPLIFIER FOR THE AEGIS (SPY-1) RADAR HAS REDUCED THE COST FROM \$21,000 TO \$12,000 EACH. THIS TRANSLATES INTO A SAVINGS OF ABOUT \$900,000 PER SHIP SET.

TURNING TO FY30 AND BEYOND, WITH OVER 30 MILLION DOLLARS WE EXPECT 53 NEW STARTS IN THE FY80 PROGRAM. SOME OF THESE WILL BE THE DIRECT RESULT OF THE COST DRIVER STUDY IDENTIFIED PROBLEMS.

ALSO DURING THIS TIMEFRAME, IMPLEMENTATION OF AN INVESTMENT STRATEGY PLAN AND PROJECT RANKING SYSTEM IS ANTICIPATED. THE FULL IMPACT OF THESE TWO ACTIONS WILL NOT BE EVIDENT UNTIL FY81 AND FOLLOW-ON YEARS, HOWEVER.

FY80 WILL PROVIDE MUCH ADDITIONAL SAVINGS DATA FROM IMPLEMENTED PROJECTS; THOSE BEGUN IN FY77. THESE DATA WILL BE FACTORED INTO THE DATA BASE FOR TRACKING THE RETURN ON INVESTMENT MADE BY THE NAVY IN RECENT YEARS. WE ARE LOOKING FORWARD WITH ANTICIPATION TOWARD ATTRACTIVE RESULTS, WHICH WE FEEL WILL PROVIDE FURTHER IMPETUS TO OUR PROGRAM.

IN AN ATTEMPT TO SATISFY THE NEEDS OF THE FLEET, ENHANCE PRODUCTIVITY AND PRODUCE THE BEST PAYBACK, WE EXAMINED THE ACQUISITION OF WEAPON SYSTEMS IN THE OUT YEARS AND IDENTIFIED SEVERAL MAJOR THRUST AREAS OF GENERIC INTEREST TO THE NAVY PROGRAM, SOME SPECIFIC AREAS ARE SHOWN HERE. THIS LISTING IS NOT INTENDED TO REFLECT AN ORDER OF PRIORITY NOR SHOULD IT BE CONSIDERED COMPLETE. THE IDENTIFIED THRUSTS ARE VIEWED AS BUILDING BLOCKS IN OUR PROGRAM, AND THEY ARE PRESENTED HERE TO GIVE THE PRIVATE SECTOR LEAD TIME IN RESPONDING TO THESE INTERESTS AND FOR STRUCTURING THEIR PLANS ACCORDINGLY.

NAVY "MANAGEMENT HAS MADE A DECISION TO MOUNT A MAJOR INITIATIVE TO INCREASE IN-HOUSE PRODUCTIVITY, STARTING IN FY82, MT PROJECTS WILL BE ALIGNED WITH THIS INITIATIVE.

IT IS ANTICIPATED THAT PROPOSALS GENERATED AS A DIRECT RESULT OF THE AIRCRAFT AND SHIPS OVERHAUL STUDIES WILL PROVIDE A MAJOR CONTRIBUTION TO THIS INITIATIVE.

MT PROGRAM

MANUFACTURING/OVERHAUL RELATED THRUSTS/INTERESTS

- NEAR NET SHAPE
- VHSIC
- HIGH POWER LASERS
- COMPUTER AIDED
MANUFACTURING
- MICRO ELECTRONICS
- COMPOSITE MATERIALS
- ROBOTICS
- ELECTRO-OPTICS

SUMMARY

- NAVY/INDUSTRY COOPERATION
- APPLY VARIETY OF TALENTS
- CONSTRICTING PROCUREMENT CHALLENGE
- COORDINATE CAPABILITY WITH GENERIC NEEDS
- FAVORABLE ENVIRONMENT FOR
IMPROVED PRODUCTIVITY

IN SUMMARY I WOULD LIKE TO

EMPHASIZE THESE POINTS:

THE NAVY MANUFACTURING TECHNOLOGY PROGRAM RELIES ON
A VARIETY OF TECHNOLOGIES AND EXPERTISE FROM THROUGHOUT
THE DEFENSE INDUSTRIAL COMMUNITY.

OVER THE COMING MONTHS, THE COMBINED BODY OF IN-HOUSE AND
PRIVATE INDUSTRIAL TALENT WILL BE STRESSED TO MORE
CLOSELY ADDRESS COST IDENTIFIED MANUFACTURING NEEDS
WHILE OBSERVING THE REALITIES OF A CONSTRICTING PROCUREMENT
ARENA.

THIS SHOULD INCLUDE ATTENTION TO GENERIC THRUSTS, OF IN-
TEREST TO THE COMMANDS, COUPLED WITH A RECOGNITION OF
KNOWN PROCUREMENT AND MANUFACTURING NEEDS. THIS WILL
HELP FORM A MORE COHESIVE PROGRAM WHILE RETAINING CURRENT
PROGRAM ADVANTAGES.

TO DO THIS WE WILL EMPLOY THE ANALYTICAL RESULTS OF
STUDY DERIVED COST DRIVER DATA, TOGETHER WITH THE
SUGGESTIONS AND TECHNOLOGICAL SOLUTIONS PROVIDED IN
ANSWER TO OUR IDENTIFIED GOALS.

WE FEEL THAT THE OUTLOOK IS GOOD AND THAT OUR EXPERIENCE
IN THE PAST HAS BEEN WORTHWHILE. WE LOOK FORWARD TO
IMPROVING OUR RECORD AND OUR PERFORMANCE - WITH YOUR HELP.

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